

## CONVERTING A HIERARCHICAL DATA STRUCTURE INTO A FLAT DATA STRUCTURE

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### ABSTRACT

Upon receipt of the hierarchical data structure, a shape tree is constructed corresponding to the hierarchical data structure. The shape tree is an intermediate data structure containing only one unique node for each element of the hierarchical data structure. After the shape tree is constructed, it is annotated with properties describing the hierarchical relationships between elements of the hierarchical data structure. The annotated shape tree is used to create the structure of the flat data structure. Once the shape tree is annotated, the column names for the flat data structure are built utilizing the annotated shape tree. With the column names built, data is emitted from the hierarchical data structure into the proper columns and rows of the flat data structure.

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